

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 17 MAY 2006

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Applicant's or agent's file reference AJC/P104315WO	<b>FOR FURTHER ACTION</b> See Form PCT/PEA/416	
International application No. PCT/GB2005/000934	International filing date (day/month/year) 10.03.2005	Priority date (day/month/year) 10.03.2004
International Patent Classification (IPC) or national classification and IPC INV. B01D29/82 C02F11/12 G21F9/04 G21F9/34 B30B9/22		
Applicant BRITISH NUCLEAR FUELS PLC et al.		
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>		
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>		
Date of submission of the demand  10.01.2006	Date of completion of this report  16.05.2006	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  de Biasio, A  Telephone No. +49 89 2399-	



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2005/000934

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**Box No. I Basis of the report**

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1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements**\* of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

**Description, Pages**

1-9 as originally filed

**Claims, Numbers**

1-45 as originally filed

**Drawings, Sheets**

1/4-4/4 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

\* If item 4 applies, some or all of these sheets may be marked "superseded."

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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	18-21,31-45
	No: Claims	1-17,22-30
Inventive step (IS)	Yes: Claims	-
	No: Claims	1-45
Industrial applicability (IA)	Yes: Claims	1-45
	No: Claims	-

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. US-4.244.287 (D1) discloses a method for the volume reduction of a sludge, i.e. a solid/liquid dispersion, comprising the following steps:
  - (a) providing a receptacle comprising at least one permeable or semi-permeable membrane (cf col. 6, ll. 38-43);
  - (b) introducing said solid/liquid dispersion into said receptacle; and
  - (c) applying a mechanical force so as to substantially expel said liquid and compact the solid residue.

The application of said mechanical force comprises the application of pressure to said solid/liquid dispersion or suspension by means of at least one solid mechanical member, which can be a piston (cf col. 7, ll. 14-16) or an inflatable bag (cf col. 7, ll. 41-44). As the pressure exerted on the slurry should be the lowest at the starting of the compression, the magnitude of said pressure must be increased during the process.

D1 appears to disclose all the features of the method of claim 1 (Art. 33(2) PCT).

2. The additional technical features of dependent claims 2-45 do not seem to be new (Art. 33(2) PCT and/or inventive over D1:

From the discussion above, it also appears that D1 discloses the additional technical features of dependent claims 2-4 (Art. 33(2) PCT). To apply the method of D1 to a slurry generated in the nuclear industry should be straightforward for the skilled person, i.e. should not be inventive (Art. 33(3) PCT).

It should also be noticed that in the present technical field to pressurize a slurry with piston in a cylinder or with an inflatable bag seem to be well-known alternatives, the subject-matter of claims 15 and 22 are not new over D1 (Art. 33(3) PCT).

To compact a receptacle containing dewatered waste material from the nuclear industry seems to be known from DE-C-19513846 (D2) and WO-97/13254 (D3). No inventiveness can be seen in the methods of dependent claims 37-45 (Art. 33(2)

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(SEPARATE SHEET)**

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3. FR-A-884894 (D4) discloses a method for pressure filtration of a sludge (cf page 2, ll. 1-3) wherein the sludge is placed inside a receptacle and subsequently compressed by means of an inflatable bag. D4 should be novelty destroying for the subject-matter of claims 1-4, 6-17 and 30 (Art. 33(3) PCT).
4. US-A-5.227.060 (D5) discloses a method of filtering liquid of a radioactive slurry, e.g. generated in nuclear reactor power plants (cf col. 1, ll. 10-20). In D5 the slurry is squeezed by applying a vacuum, i.e. a pressure difference. A non-porous membrane 280 (cf figure 1) compresses the water from the slurry, the water passing the filters 300 and 310. D5 should also be novelty destroying for the subject-matter of claims 1-8 (Art. 33(2) PCT).

**Re Item VII**

**Certain defects in the international application**

1. No prior art documents is cited in the application (Rule 5.1(a)(ii) PCT).
2. The claims should be provided with reference signs (Rule 6.2(b) PCT).